

FAA FY 1999 ACCOMPLISHMENTS

FAA accomplished a great deal in FY 1999 toward addressing its safety, security, and system efficiency goals. This paper highlights some of the accomplishments FAA considers most important. The purpose is to help the aerospace community assess whether FAA is setting the right priorities and taking the right steps to work with its partners to secure a safe, secure, efficient aerospace system for the future.

Mission Goal: *SAFETY*

By 2007, reduce U.S. aviation fatal accident rates by 80 percent from 1996 levels.

Safety must be the “North Star” for all of aerospace. FAA has cooperated closely with the aerospace community to go beyond minimum regulatory requirements and achieve a level of safety only possible when all parts of aerospace work together toward a common goal. The FAA Strategic Plan contains three broad safety strategies, Accident Prevention, Safety Information Sharing and Analysis, and Certification and Surveillance. Key recent FAA accomplishments include the following.

Accident Prevention

Safer Skies. The Safer Skies program is well underway. FAA and the aerospace community are working together on a data-driven program to identify and study the recurrent causes of accidents, then develop and implement interventions. Analysis has been completed addressing causal factors related to approach and landing accidents, controlled flight into terrain, and uncontained engine failure. Interventions are moving forward.

Safer Skies has also addressed cabin safety. Working through Partners in Cabin Safety (PICS), FAA revalidated its causal factor analysis on cabin safety problems. FAA and the airlines then implemented a campaign to provide the public with information to help address problems due to passenger interference with flight, passenger seat belt use, carry-on baggage, and child restraint.

Other achievements include publication of eight final rules on uncontained engine failures in April. FAA issued a Notice of Proposed Rulemaking (NPRM) to mandate Terrain Awareness and Warning Systems (TAWS) on passenger aircraft and is working on the final rule. Concurrently, the major airlines have already begun installation of these systems and Boeing is installing them in its production lines. Finally, FAA and the aerospace community developed a plan with near term initiatives to address runway incursions, and as of the end of September, 15 of the 18 initiatives have been completed.

The next year will be crucial for Safer Skies. Agreed upon interventions in the areas of pilot and controlled CFIT training, establishing Flight Operations Quality Assurance (FOQA) and the Aviation Safety Action Program (ASAP), and implementing precision-like approaches will begin implementation. Other interventions will be adopted. Those interventions, taken together, are designed to address the 80 percent accident rate reduction goal.

Information Sharing

Voluntarily Supplied Safety Information. A Notice of Proposed Rulemaking (NPRM) was published July 26 to exempt such information from Freedom of Information Act requirements. The comment period closed November 4.

Global Aviation Information Network (GAIN). The third GAIN World Conference was held in November 1998, and the fourth conference is scheduled currently for June 2000 in Paris. Also, GAIN supports the development of the digital flight data safety information collection system known as Flight Operations Quality Assurance (FOQA). United, Continental, Alaska, USAirways, TWA and Delta are currently conducting FOQA demonstration programs to evaluate the usefulness of compiling and analyzing routine flight data to identify potential safety trends. On December 2, FAA released a policy stating that it would not use safety data generated in a FOQA program for enforcement actions, except in egregious cases, since it will provide the FAA with an additional tool to improve aviation safety.

National Aviation Safety Data Analysis Center (NASDAC). NASDAC is in place and serving aerospace with state-of-the-art safety information and analysis capability. In the past year, FAA prepared plans to guide the overall future development of NASDAC and to develop safety data standards, established a NASDAC Center users group, and incorporated new data pattern recognition technology and an integrated digital flight data analysis capability into NASDAC.

Certification and Surveillance

Safety Performance Analysis System (SPAS). In FY 1999, FAA trained over 3400 inspectors who are now using this risk-based analytical tool. SPAS assists FAA aviation safety inspectors in targeting potential problem areas that may need more inspector attention and allows improved use of FAA resources.

Air Transportation Oversight System (ATOS). ATOS targets resources and improves safety certification and oversight of air transport operators. In FY 1999, Certificate Management Teams primarily implemented ATOS for 10 major air carriers as Phase I. An "ATOS Data and Implementation Audit" then assessed the effectiveness of the Phase I system. Using results from this audit, FAA completed its Phase II Implementation plan in September. The Phase II implementation is directed at expanding ATOS to the remaining air carriers. The plan addresses methods of prioritizing the next group for ATOS inclusion.

Aircraft Certification Systems Evaluation Program (ACSEP). ACSEP is the primary method the Aircraft Certification Service uses to monitor compliance by production approval holders and their priority part suppliers with applicable Code of Federal Regulations requirements. In FY 1999, over 500 ACSEPs were completed on production approval holders and suppliers throughout the country.

Reentry Authority. During FY 1999, Congress enacted and the President signed legislation to grant explicit authority for FAA to license reentry of space vehicles. FAA also promulgated a Notice of Proposed Rulemaking to implement the reentry authority.

Dangerous Goods. In FY 1999, FAA inspected some 1,000 shippers of dangerous goods. FAA plans to increase the number of shippers inspected because most civil penalties are the result of undeclared dangerous goods that leak or spill at an airport. There are an estimated 75,000 shippers who transport goods on U.S. air carriers.

NAS Modernization Safety Assessment Initiative. FAA is developing procedures to assure high safety levels are achieved in the NAS modernization process. In FY 1999, FAA developed target levels of safety for terminal and en route airspace and completed a preliminary operational safety assessment of the U.S. oceanic and offshore environment. FAA compiled a preliminary hazard list associated with use of dynamic resectorization and completed a system safety assessment of the Miami airspace and the Bahamas.

Mission Goal: *SECURITY*

Prevent security incidents in the aviation system.

Aerospace security is an integral part of national security, and FAA works closely with the aerospace community, national security organizations, and state and local transportation and law enforcement entities to assure security for U.S. aerospace passengers and goods. The 1997 White House Commission on Aviation Safety and Security recommendations have formed the core of the approach FAA and the transportation community have taken toward aerospace security. The key strategy is to set a high baseline of security throughout the system and then probe the aerospace system to identify and address vulnerabilities. Information security is a key focus area because the aviation system is so dependent on the communication of information to assure safe flight. Key FY 1999 accomplishments include the following.

New Security Baseline

Deploy Advanced Security Technology. A key change that resulted from the White House Commission recommendations was that Congress authorized and funded a program for FAA to purchase and deploy advanced security technology. By the end of FY 1999, FAA had deployed over 520 explosive trace detection devices and installed approximately 90 explosives detection systems (EDS) for screening checked bags. FAA recently certified a second provider of EDS. FAA also completed operational evaluation and blast testing of hardened containers used in airline operational trials. An ongoing FAA concern is gaining full utilization of the security devices it has purchased for airline use.

Implement Automated Passenger Screening. This is a prime example that partnership can be beneficial for all concerned. Airlines are voluntarily using the Computer Assisted Passenger Pre-screening System (CAPPS). A second advancement was publication of the NPRM on the security of checked baggage on flights within the United States. The FAA has considered all comments and preparation of the final rule is underway. It will be published late next year.

Information Security

FAA Information Systems Security (ISS) Program. In March, the FAA completed its Critical Infrastructure Protection Plan (CIPP) and transmitted it to the Office of the Secretary of Transportation (OST). This plan details the FAA ISS program and serves as the FAA's ISS mission statement. The FAA has also developed and begun implementation of a computer security incident response capability (CSIRC). FAA certified the security of seven FAA information systems, trained well over 5,000 FAA employees, and distributed 2,000 copies of a Security Awareness Briefing video to FAA headquarters and field offices, OST, the National Security Council, members of Congress, and industry. FAA also developed several draft documents, including an ISS policy, ISS Concept of Operations, and a draft Information System Security Architecture.

Mission Goal: SYSTEM EFFICIENCY

Provide an aerospace transportation system that meets the needs of users and is efficient in the application of FAA and aerospace resources.

If safety is the “North Star” of the Department of Transportation and FAA, then assuring an efficient aerospace system that provides mobility for American people and goods and promotes economic growth ranks as a close second. FAA’s strategies are Free Flight, National Airspace System modernization, and systems integration.

Free Flight

Free Flight Phase 1. This program, the initial phase of Free Flight, seeks to deliver, use, and evaluate the performance and benefits of 5 new core capabilities that will facilitate collaboration between the FAA and system users and support controllers’ decisions to approve pilots’ requests to fly more optimal routes to their destinations. Progress was made on all 5 capabilities. In particular,

- The **Surface Movement Advisor (SMA)** began providing aircraft arrival information to airlines at Detroit Metro and Philadelphia Airports starting last December.
- **Collaborative Decision-Making (CDM)** provided an initial collaborative routing capability based on an electronic chalkboard. At least one airline has established connections to it and has participated in collaborative routing discussions.
- The **Conflict Probe-User Request Evaluation Tool (URET)** provided two-way probe capability to the Indianapolis and Memphis Air Route Traffic Control Centers (ARTCCs), and controller trials are underway.

Restriction Elimination and Flexible Flight Planning. Through the end of FY 1999, FAA has eliminated 170 FAA-preferred routes under Phases 1 and 2 of the Preferred Route Reduction Program. FAA also installed in Kansas City a prototype monitoring system, the Collaborative Routing Coordination Tool (CRTC), to minimize the use of miles-in-trail en route restrictions. Tests in late 1998 returned favorable results, and enhancements are now being added to the tool.

NAS Modernization

Wide Area Augmentation System (WAAS). A key completion was the risk assessment released by the Johns Hopkins University Applied Physics Laboratory in January 1999. It found that GPS with appropriate WAAS and Local Area Augmentation System (LAAS) configurations can satisfy the required navigation performance as the only navigation system installed in the aircraft and the only navigation service provided by FAA. As part of a program rebaselining, the FAA decided to retain a subset of today's navaids until FAA and users are confident that satellite navigation can serve as the only means of radionavigation in the NAS. Several other WAAS milestones were accomplished in FY 1999, including a test readiness review, a functional qualification test, a formal qualification review, and audits of the physical and functional configurations.

Currently, WAAS Initial Operational Capability is projected for September 2000.

Display System Replacement (DSR). This system, which replaces aging controller display and computing infrastructure, represents a major recent success for FAA. During FY 1999, FAA completed independent operational test and evaluation of the system, implemented a series of upgrades at the request of the National Air Traffic Controllers Association (NATCA), achieved government acceptance of DSR at all sites and full operational readiness demonstration at 8 sites.

NAS Infrastructure Management System (NIMS). NIMS is a system of new technological tools and processes to improve the productivity of Airway Facility services for NAS customers. Toward that end, in January 1999 FAA opened a National Operations Control Center, and in October completed coordination of a draft FAA NAS Service Management System policy.

Host and Oceanic Computer System Replacement (HOCSR). The HOCSR project replaces the air traffic control system's main computer processor for domestic and oceanic airspace and modifies the software. On September 30, the FAA completed implementation of HOCSR at all 23 en route and oceanic centers.

System Integration

Space and Air Traffic Management System (SATMS). In the future, aircraft and spacecraft are going to use many of the same systems, including satellite navigation and probably even airports/spaceports. SATMS seeks to integrate space and air traffic management to serve that future vision. In FY 1999, FAA developed a Commercial Space Transportation Concept of Operations. FAA tested a process to assess the impacts and requirements of one launch and reentry at one site on the National Airspace System (NAS). FAA is identifying the capabilities required to implement the Commercial Space Transportation Concept of Operations in the NAS and will integrate those capabilities into the baseline database of the next NAS Architecture. FAA is also developing a process to assess the impacts of reusable launch vehicles on the NAS.

NAS Airport Integration. FAA identified, based on the NAS Architecture, a time-phased set of requirements for airport modernization to match planned capital investments. This allows linkage of air traffic control capital investments and projected

Airport Improvement Program projects beyond FY 2000. FAA also prepared an Airports Concept of Operations (CONOPS).

Airports and Runways. Three new runways are under construction, and a dozen more are planned. Due to timely maintenance and rehabilitation, 95 percent of all runways are currently in good or fair condition. FAA commissioned a pavement testing machine to help refine pavement designs, lower life cycle costs, and meet the needs of the next generation of large aircraft. Some 98.2 percent of all Americans now live within 20 miles of a NPIAS airport.

ADDITIONAL KEY ACCOMPLISHMENTS:

Y2K. As of June 30, 1999, all (100 percent) mission critical and non-mission critical systems requiring implementation were implemented and certified Y2K compliant. FAA has been working with the aerospace community and international aviation authorities to assure worldwide aerospace Y2K compliance.

Stage 3 Transition. The transition to Stage 3 aircraft is now virtually complete. FAA has conducted examinations to ensure that all operators remain in compliance. An annual compliance report has been transmitted to Congress. Action has been completed on all final compliance waiver requests.

Implement a Cost Accounting System (CAS). The CAS was implemented in the Air Traffic Services Line-of-Business (LOB) in June 1999 for Enroute and Oceanic services. Cost information provided by the CAS will enable the ATS LOB to better understand and manage its costs. In addition, it will support the collection of Overflight user fees. Efforts were also initiated to implement CAS in the Research and Acquisition LOB, and in the Air Traffic Services for Flight Services.